AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in this application:

LISTING OF CLAIMS:

1. (Previously Presented) A potentiometric sensor device for measuring pH value, comprising:

a substrate;

two electrodes positioned on the substrate, wherein the two electrodes are applied with the aid of thick film technology, and wherein the two electrodes form an interdigital comb structure; and

an evaluation circuit disposed on the substrate and in communication with the electrodes, the evaluation circuit configured to detect a degradation process of a motor oil based on the potentiometric response of the two electrodes.

2. (Original) The potentiometric sensor device as recited in claim 1, wherein, in the region of the interdigital comb structure, the two electrodes have a spacing between 0.1 µm and 1000 µm.

3. (Original) The potentiometric sensor device as recited in claim 2, wherein the spacing between the two electrodes in the region of the interdigital comb structure is between 160 µm to 200 µm.

4. (Original) The potentiometric sensor device as recited in claim 3, wherein the substrate is made of a glass ceramic foil having a low electrical conductivity and a high mechanical strength.

5. (Original) The potentiometric sensor device as recited in claim 4, wherein the substrate is made of a low temperature sintering glass ceramic that cures at a temperature under 1000°C.

6. (Previously Presented) The potentiometric sensor device as recited in claim 5, wherein the two electrodes are made of at least one of metals and metallic oxides.

7. (Original) The potentiometric sensor device as recited in claim 6, wherein the two electrodes are made of at least one of silver and iridium dioxide.

8. (Original) The potentiometric sensor device as recited in claim 7, wherein at least one electrode is made of silver and has a silver halogenide layer on its surface in the region of the interdigital comb structure.

9. (Original) The potentiometric sensor device as recited in claim 1, wherein the two electrodes are applied to the substrate in the form of pastes, and wherein, in order to improve adhesion between the two electrodes and the substrate, the pastes include an inorganic material between approximately 0.2 mass% to 20 mass%.

10. (Original) The potentiometric sensor device as recited in claim 9, wherein the pastes include an inorganic material between approximately 10 mass% to 15 mass%.

11. (Original) The potentiometric sensor device as recited in claim 10, wherein the inorganic material corresponds to the substrate material.

12. (Original) The potentiometric sensor device as recited in claim 10, wherein the pastes are made of a powder mixture of electrode material and inorganic material, and a carrier material, the proportion of the powder mixture in the paste being between approximately 10 mass% and 70 mass%.

13. (Original) The potentiometric sensor device as recited in claim 11, wherein the pastes are made of a powder mixture of electrode material and inorganic material, and a carrier material, the proportion of the powder mixture in the paste being between approximately 10 mass% and 70 mass%.

14. (Original) The potentiometric sensor device as recited in claim 1, wherein a hydrous layer made of a hydrous polymer is provided on the two electrodes.

15. (Original) The potentiometric sensor device as recited in claim 14, wherein the hydrous polymer is one of a polyamide and a polyimide.

16. (Original) The potentiometric sensor device as recited in claim 3, wherein a hydrous layer made of a hydrous polymer is provided on the two electrodes.

17. (Original) The potentiometric sensor device as recited in claim 16, wherein the hydrous polymer is one of a polyamide and a polyimide.

18. (Original) The potentiometric sensor device as recited in claim 4, wherein a hydrous layer made of a hydrous polymer is provided on the two electrodes.

19. (Original) The potentiometric sensor device as recited in claim 18, wherein the hydrous polymer is one of a polyamide and a polyimide.

20. (Previously Presented) The potentiometric sensor device as recited in claim 1, wherein the evaluation circuit is further configured to normalize a measurement in response to different operating states of the motor oil.